

air, so far from being the one thing to be studied, as the casual observer might suppose, is perhaps not even the chief thing. Of still greater importance, probably, are the manifold effects of diminished pressure on all the tissues and organs of the body, on the vascular system in all its parts, peripheral and central, and the far-reaching secondary results of the changes in the circulation thus brought about. These are further complicated by the influence of variations in temperature and in the qualities of the sun's rays.

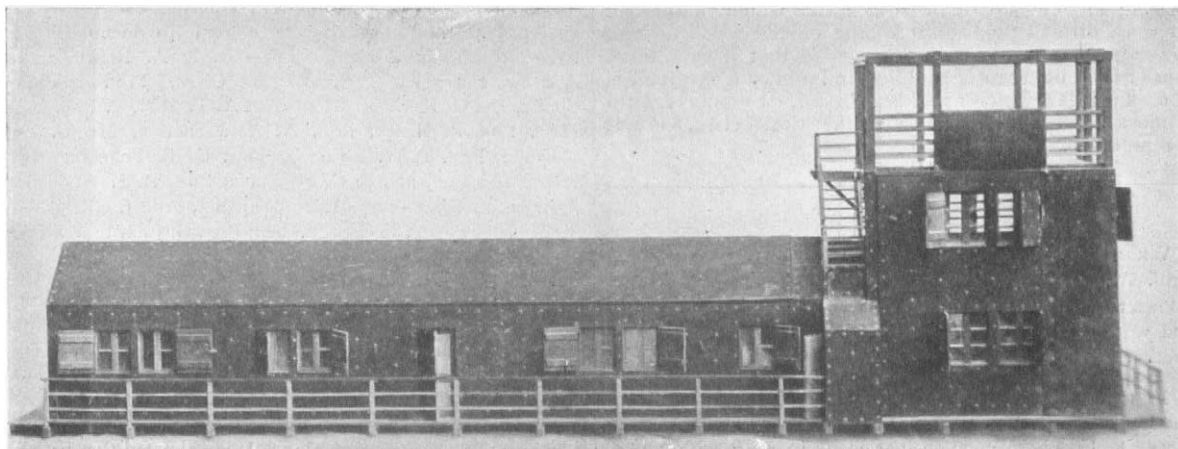
It is through their complexity that the problems in question hold out so much promise; for they carry us beyond the mere question why such or such physiological incidents occur during a high mountain ascent, they lead us more or less directly to fundamental matters of physiology.

To solve these problems two things are needed—the possession of exact instruments of precision, and the opportunity of making use of these instruments at ease and with freedom from disturbance. The observations necessary to solve the problems which we have now before us cannot be satisfactorily conducted by means of rough instruments carried in the pocket, and cannot be adequately made in the open while the observer, blown about by a cutting wind, is steadying himself on his

acknowledged at the International Congress of Physiology held at Turin in September last under the presidency of Prof. Mosso. On the motion of Prof. Bowditch, of Harvard University, it was unanimously resolved to recommend the physiological laboratory forming part of Regina Margherita Observatory to the International Association of Academies as worthy of international support.

Nor was this the only token of approval shown at the Congress. One of the features of the Congress was an exhibition of physiological apparatus gathered from various countries; many of the pieces so shown, including several valuable exhibits from this country, were presented by the makers or private individuals exhibiting them to the Observatory. These, under the care of Prof. Mosso, now belong to the physiological laboratory of the Regina Margherita Observatory.

Hence any physiologist who desires in the ensuing summer vacation to enjoy the united pleasures of high Alpine life and physiological investigation, and we trust that there are not a few such, can do so with ease or even in luxury, finding in the Observatory, not only quiet and shelter, but also almost every apparatus and appliance which he is likely to need. I think I may venture to say that my friend Prof. Mosso deserves the warm



The Regina Margherita Observatory. The first room to the left of the two-storied part of the Observatory is the physiological laboratory.

ice-axe. Happily, both these needs can now be supplied to any competent observer whose inquiry justifies the concession of them.

It was a happy thought of the Dowager Queen Margherita of Italy, whose love for the Alps is known to all the world, to convert into a scientific observatory the Regina Margherita Hut, which stood on the Gnifetti Peak of Monte Rosa at an altitude of 4560 feet, and which had proved of such service to mountain climbers. At her spontaneous suggestion, and by her beneficence, assisted by the Italian Government and with other help, the Hut, largely through the zeal and activity of Prof. Angelo Mosso, of Turin, has been transformed into the Regina Margherita Observatory, fitted up for scientific observations of various kinds.

Prof. Mosso is a physiologist, especially interested in the physiological problems of high altitudes, as shown by his book "Life of Man on the High Alps," and it is through his care that in the Regina Margherita Observatory, in addition to the provision for meteorological, astronomical and other physical observations, physiology has not been neglected. One of the rooms has been set apart for physiological observations and experiments. The great benefit thus rendered to physiology was

thanks, not only of all physiologists, but of all men of science, for what he has thus done. M. FOSTER.

#### PROF. EXNER ON SCIENCE AND THE STATE.

THE Vienna correspondent of the *Times*, writing on the 7th inst., comments upon a recent address of Prof. Exner which deals with the coming rule of technically trained men, that is, of men who can apply the principles of natural science; engineers trained in colleges as well as in works. The encouragement to scientific education given by foreign statesmen excites in this country only a feeble attention not unmixed with contempt. With us, higher education is still what it was in the time of Queen Elizabeth, and its advocates affirm that the education of men like Burleigh and Bacon, of Coke and Raleigh is good enough for statesmen of the twentieth century. This explains our difficulty in understanding Prof. Exner. Much of the pure science of the world is due to such British genius as could escape the academic net, and yet the power to apply that science is carefully kept away from the British people. We have started all the

branches of engineering; we have invented nearly all the important things, but the great development of these things has gone out of the hands of the amateurs of our nation. It is because our statesmen are Gallios who "care for none of these things," because they know nothing of science. Huxley failed to move them. The German Emperor's fosterage of engineering only amuses them, and hence our manufacturers blame everything except their own ignorance for their loss of trade. Prof. Exner wants to put the technically educated man in charge of all departments of Government which have to do with manufacture and distribution; with the use of all tools, including, we presume, guns and other weapons of destruction. He does not seem to know what is so obvious to us in England, that the Ministers in charge of departments must have had such a training of another kind that it is impossible for them also to be engineers. All we ask is that they shall know just a little about science, so that they may be able to take scientific advice. But alas! even this condition of things is remote. However important it would be to have men of the quality of engineers as their advisers or in charge of the various parts of a great department, there are qualifications more important—power to coax the Treasury for necessary money; social qualities such as come from good birth and enable one to keep one's superiors favourably disposed; qualities created by official life which enable one to work obediently as part of the official machine and never get into a rage; the knowledge that if ever there is a conflict between official law and a law of nature, it is the official law which must be obeyed. For our reform what is wanted is a cataclysm, rather destructive, but not too much so.

J. P.

#### NOTES.

WE see with deep regret the announcement of the death of Prof. A. Cornu, whose numerous researches in physics are known throughout the scientific world. An account of the life and work of this distinguished investigator will appear in another issue of NATURE.

By the death of Lord Kimberley, the office of Chancellor of the University of London becomes vacant. Of the names of those who have been mentioned as likely to fill it with advantage that of Lord Rayleigh is obviously the most appropriate. The new teaching University of London must achieve a high reputation on scientific lines or it will fail of its mission; a mere politician as a figure-head would be an anachronism.

PROF. RAY LANKESTER, in a letter to the *Times* of April 15, raises a new point in relation to the Rhodes scholars at Oxford. He states that the University of Oxford keeps its college residences, lecture rooms and laboratories open for only twenty-one weeks out of the fifty-two which make up a year; so that "it will not be worth while for a young German of ability to sacrifice three or four of the best years of his life to dawdle through the Oxford half-time system, even when paid 300*l.* a year for doing so." If it be true that the laboratories are shut for thirty-one weeks in the year, then certainly the sooner William Morris's idea of dispersing the inhabitants and consecrating Oxford to Death and Beauty, the better for others as well as the Germans to whom Prof. Lankester refers.

THE high esteem in which the late Sir John Donnelly was held was shown by the large body of mourners that attended his funeral at Brompton Cemetery on Friday last besides the members of the family. The Lord President of the Committee of Council on Education was represented; and among other mourners were the Clerk to the Council, the vice-president and officers of the Board of Education, representatives of the

Victoria and Albert Museum, Geological Survey and Museum of Practical Geology, Royal College of Science, and Solar Physics Observatory. The Royal Society, Royal Academy, and the London Technical Education Board were also represented. Among the wreaths was one bearing a card on which was printed: "A tribute of affectionate regard from the vice-president of the committee of council, officers and staff of the (late) Department of Science and Art, including the Victoria and Albert Museum, the Royal Colleges of Science and Art, and the Geological Survey and Museum, 11 April, 1902." Another wreath was from the Dublin Science and Art Institution: "In token of affectionate remembrance and sincere regret from those who served under Sir John Donnelly." Other wreaths were sent by Sir Trevor and Lady Lawrence, Sir Lawrence and Lady Alma-Tadema, and many others. The Victoria and Albert Museum was closed on the morning of the funeral.

DR. J. LARMOR, Sec. R.S., and Dr. Oliver Lodge, F.R.S., have been elected members of the Athenæum Club under the rule which empowers the annual election by the committee of nine persons "of distinguished eminence in science, literature, the arts, or for public services."

AT the meeting of the American Philosophical Society held on April 4, the following were elected to membership:—*Residents of the United States*—Dr. J. A. Brashear, Dr. Andrew Carnegie, Prof. W. B. Clark, Prof. Hermann Collitz, Mr. G. K. Gilbert, President A. T. Hadley, Prof. G. E. Hale, Prof. P. Haupt, Prof. A. A. Michelson, Mr. C. Hart Merriam, Prof. T. W. Richards, Prof. F. E. Schelling, Prof. R. H. Thurston, Mr. B. C. Tilghman, Prof. R. S. Woodward. *Foreign Residents*—Prof. A. H. Becquerel, Prof. J. G. Darboux, Sir Michael Foster, K.C.B., F.R.S., Prof. G. Johnstone Stoney, F.R.S., Prof. S. P. Thompson, F.R.S.

As already announced, the German Association of Natural Philosophers and Physicians will hold its seventy-fourth annual congress at Carlsbad on September 21–28. As on former occasions, the rule that lectures and debates may be carried on in any language of the world will be followed, and foreign visitors will be accorded the same privileges as the ordinary members of the association enjoy. It is estimated that between 6000 and 8000 representatives of natural philosophy and medicine will gather at Carlsbad, and great preparations have already been made there to receive the members and friends of this famous association. Nearly all the principal professors of the Berlin, Vienna, Prague and most of the other continental universities and important colleges will be present, and twenty-eight different branches of ancient and modern science will form the programme for the lectures and debates. At the exhibition of scientific objects, which will be held in connection with the congress, no charge will be made to exhibitors for the space required, nor will any entrance fee be asked from visitors. Inquiries or letters should be addressed to "The 74th Congress of Natural Philosophers at Carlsbad."

IN reply to a question relating to the North Sea Fisheries, Mr. Gerald Balfour stated in the House of Commons on Monday that the Government has agreed to take part in the international scheme of investigations connected with fishery problems in the North Sea and adjacent waters as proposed by the conferences held at Stockholm and Christiania, and Parliament will be asked to make a grant to defray the cost of the British share of these investigations. These funds will be administered by a departmental committee with the advice of scientific experts. The details of the investigations will no doubt be finally settled at the forthcoming meeting of the inter-